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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,611	07/22/2003	Seong-Mo Park	P69035US0	5058

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EXAMINER
REKSTAD, ERICK J

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/623,611	PARK ET AL.	
	Examiner	Art Unit	
	Erick Rekstad	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is a First Action for application no. 10/623,611 filed on July 22, 2003 wherein claims 1-8 are presented for examination.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,496,607 to Krishnamurthy et al.

[claims 1]

As shown in Figure 1, Krishnamurthy teaches an importance map generator(127) which is controlled by a user selection unit (126) to alter the motion estimator (140) (Col 4 Lines 1-7 and 24-31, Col 5 Lines 22-49, Col 7 Line 60-Col 8 Line 17). The citation further teaches the user's selection cause the motion estimator to enhance the motion estimation for blocks that are classified as important by changing the motion estimation algorithm (Col 5 Lines 43-49). Therefore Krishnamurthy teaches the requirements of a motion estimator which performs a motion estimation operation on the current image data using one motion estimation algorithm selected from a plurality of motion

estimation algorithms depending on a users selection. Krishnamurthy is silent on the use of a demultiplexer and multiplexer as the switching means for selecting the motion estimation operation.

As shown in Figure 1, Hong teaches the use of a demultiplexer (110) and a multiplexer (140) controlled by a controller(90) to select between operations (Col 11 Lines 12-31). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the switching means of Hong with the encoding means of Krishnamurthy in order to switch motion estimation operations based on user's selection as Hong teaches the combination of a demultiplexer and a multiplexer is known to be used as a switching means.

[claims 3-5]

As shown above for claim 1, Krishnamurthy and Hong teach the use of a motion estimator and the demultiplexer/multiplexer switching means. The use of memory to store a current frame and a previous frame is inherent in a motion estimator. As such, all hardware required to address such memory locations is also inherent. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use known means in the art to perform the task of motion estimation (Official Notice).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krishnamurthy and Hong as applied to claim 1 above, and further in view of US Patent 6,431,466 to Lin.

[claim 2]

As shown above, Krishnamurthy and Hong teach the apparatus of claim 1. Krishnamurthy teaches the use of the user selection to change the motion estimation operation (Col 5 Lines 34-49). Krishnamurthy does not teach the type of motion estimation used.

Lin teaches the use of a hierarchical motion estimation method and Full search method (Abstract, Col 1 Lines 48-60). Lin further teaches the hierarchical method can contain two, three, or four steps (Col 2 Lines 1-18 and Col 4 Lines 7-28, Fig. 2, Fig. 8A). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the motion estimation methods of Lin with the apparatus of Krishnamurthy and Hong as they are well known motion estimation means.

Claim 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krishnamurthy and Hong as applied to claim 1 above, and further in view of US Patent 5,568,203 to Lee.

[claims 6-8]

In regards to claim 6, Krishnamurthy and Hong teach the use of a motion estimator but do know teach the use of parallel units in the estimator. Lee teaches the use of parallel units in an estimator in order to provided real-time motion estimation (Abstract, Fig. 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the parallel units of Lee with the apparatus of Krishnamurthy and Hong in order to provide real-time motion estimation as taught by Lee. The process and hardware is well known for the operation of SAD and therefore the hardware design

of claims 7 and 8 would have been known to one of ordinary skill in the art (Official Notice).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 6,480,630 to Kondo.

US Patent 5,594,813 to Fandrianto et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick Rekstad whose telephone number is 571-272-7338. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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